



Reading and Understanding SPA Tables

Example I: Availability of Child Health Services

(Based on the entire sample of health care facilities)

1 Table 4.1 Availability of child health services

Percentage of facilities offering specific child health services at the facility, by type of facility, managing authority, and zone, Tanzania SPA 2006

| Background characteristics | Percentage of facilities that offer: | | | | Number of facilities (weighted) |
|----------------------------------|--|-------------------|------------------------|---------------------------------|---------------------------------|
| | Curative outpatient care for sick children | Growth monitoring | Childhood immunisation | All basic child health services | |
| 2 | | | | | |
| 4 Type of facility | | | | | |
| Hospital | 100 | 91 | 91 | 91 | 25 |
| Health centre | 100 | 90 | 85 | 85 | 55 |
| Dispensary | 99 | 80 | 78 | 77 | 528 |
| Managing authority | | | | | |
| Government | 100 | 95 | 94 | 93 | 399 |
| Private for-profit | 100 | 30 | 24 | 24 | 102 |
| Parastatal | 100 | 50 | 40 | 40 | 14 |
| Faith-based | 99 | 81 | 78 | 78 | 92 |
| Zone | | | | | |
| Northern | 99 | 76 | 72 | 72 | 108 |
| Central | 100 | 97 | 97 | 97 | 46 |
| Southern Highlands | 100 | 87 | 85 | 84 | 95 |
| Western | 98 | 78 | 79 | 76 | 82 |
| Lake | 100 | 84 | 82 | 82 | 89 |
| Southern | 100 | 94 | 91 | 91 | 60 |
| Eastern | 100 | 69 | 64 | 64 | 102 |
| Zanzibar | 100 | 68 | 64 | 64 | 24 |
| 3 Total | 100 | 81 | 79 | 78 | 608 |

Statistical tables can look intimidating at first glance. This worksheet is designed to help you read and interpret tables from the Service Provision Assessment Survey.

Step 1: Read the title and subtitle. They provide a brief description of the information contained in the table.

Step 2: Scan the column headings - the top horizontal row. The columns summarize the indicators being measured. In this case, each column represents one child health service. The fourth column on the white background shows what percent of facilities have ALL of the 3 services. Note that the very last column, in gray, lists the (weighted) number of facilities in each category. These numbers are the denominators, that is, the total number of facilities surveyed for each topic and each background characteristic. (For more on weighting, see back page.) In this case there are data from 608 facilities.

Step 3: Look at very last row at the bottom of the table. These figures represent the total percentages. That is, the percent of ALL 608 facilities that offer each of the three services, and the percent of facilities that offer ALL basic child health services. This table shows that child health services are widely available in Tanzania; 100% of facilities offer curative care for children; 81% offer growth monitoring; and 79% offer immunisation; and 78% percent of facilities offer all three services.

Step 4: Scan the row headings - the first vertical column. The row headings show how the information is presented. In the case of the TSPA, information is presented by background characteristics- facility type, managing authority, and zone. These categories allow you to compare availability of services in hospitals versus dispensaries, government versus nongovernmental facilities, and among the zones. In this table, 77% of dispensaries provide all basic child health services compared to 91% of hospitals. There are large differences in availability of immunisation services, especially by managing authority. Only 24% of private for-profit facilities offer immunisation services compared to 94% of government facilities. There is also variation by zone: availability of all three services ranges from 64% of facilities in Zanzibar and Eastern zones to 97% of facilities in Central Zone.

Example 2: Components Needed for Childhood Immunisations (Based on a subset of health care facilities)

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Table 4.2. Health system components required for childhood immunisation services

Among facilities offering child immunisation services, percentage that have all equipment, items for preventing infection, and records indicating good administrative practices; and among facilities offering child immunisations services and storing vaccine, percentage that have all basic child vaccines and all components for providing good quality child immunisation services, by type of facility, managing authority, and zone, Tanzania SPA 2006

| Background characteristics | Percentage of facilities offering child immunisation with: | | Number of facilities offering child immunisation services (weighted) ⁴ | Percentage of facilities offering child immunisation services and storing vaccine with: | | Number of facilities offering child immunisation services and storing vaccines (weighted) |
|----------------------------|--|--|---|---|---|---|
| | All equipment ¹ | All items for infection control ² | | All basic child vaccines ⁵ | All components for providing quality child immunisation services (including vaccines) present | |
| Type of facility | 4 | | | b | | |
| Hospital | 82 | 74 | 22 | 87 | 22 | |
| Health centre | 61 | 39 | 47 | 74 | 43 | |
| Dispensary | 68 | 35 | 409 | 73 | 356 | |
| Managing authority | a | | | b | | |
| Government | 69 | 35 | 376 | 76 | 337 | |
| Private for-profit | 64 | 39 | 25 | 91 | 15 | |
| Parastatal | 50 | 50 | 6 | 75 | 6 | |
| Faith-based | 69 | 47 | 72 | 62 | 63 | |
| Total | 68 | 37 | 478 | 74 | 421 | |

¹ Blank immunisation cards, syringes and needles, and cold box with ice packs (or facility reports purchasing ice).
² Soap, running water, and sharps container.
³ Tally sheet or register where vaccines provided are recorded, and documentation of either DPT dropout rate or measles coverage.
⁴ Includes all facilities offering immunisations at the facility and some facilities offering immunisations through village outreach activities.
⁵ BCC, DPT-HB, polio, and measles vaccines.

Step 1: Read the title and subtitle. In this case, the table is about two separate groups: a) facilities offering child immunisation and b) facilities that offer child immunisation services AND store vaccines.

Step 2: Identify the two panels. Panel **a** refers to all facilities offering child immunisation services (N=478); panel **b** is a subset of panel **a**; Panel **b** refers only to the facilities offering immunisation services AND storing vaccines (N=421).

Step 3: When reading and using SPA tables, be sure to identify which group of facilities is being displayed. For example, look at the first column in panel **b**. It is NOT correct to say that 74% of facilities have all basic child vaccines. It IS correct to say that 74% of facilities offering childhood immunisation services **and** storing vaccines have all child vaccines.

Step 4: Now, read the column headings. The first column is the percent of facilities offering child immunisation that have “all equipment”. Footnote #1 explains that “all equipment” includes blank immunisation cards, syringes and needles, and cold box with ice packs. Keep in mind, that if a facility is missing just one of these items, it will NOT be included in this column. If you want to see exactly which item is missing, you can find the more detailed tables in the appendices of the TSPA report.

Step 5: Look at the column for “All equipment, items for infection control and administrative components.” These are the components the SPA defines as necessary for providing quality immunisation services. Notice that the percentages in this column are very low. This is because most facilities are missing one or more of the many items that are included in footnote #2, items for infection control, and footnote #3, administrative components. Many of the facilities may have many of the items listed. However, in Tanzania, running water is missing from about half of facilities. Running water is one of the items needed for infection control, and therefore, all of the facilities without running water will not be considered as having all items for quality immunisation services, even if they have all of the other items.

Practice: Use this table to answer the following questions (answers are upside down, below):

- a) What type of facility providing child immunisation is most likely to have all items for infection control?
- b) What percentage of parastatal facilities offering child immunisation services have all items for providing quality immunisations (all equipment, all items for infection control, AND administrative components)?
- c) What number of government facilities in the sample provide immunisation services? (Hint: remember, the gray shaded boxes show the NUMBER of facilities, while the rest of the table shows the percentages.)
- d) What percentage of facilities offering childhood immunisations AND storing vaccines have all of the basic child vaccines in stock?
- e) If you had to take your child for a vaccination what type of facility would be most likely to have the vaccine you needed in stock?

- a. Hospitals - 74% of hospitals that provide childhood immunisations have all items for infection control.
- b. 25% of facilities
- c. 376 government facilities offer immunisation services
- d. 74%
- e. Hospitals - 87% of hospitals that offer immunisation services and store vaccines had all basic vaccines in stock.

Example 3: Understanding Samples and Weighting in SPA Tables

In a SPA survey, a sample is a group of facilities that have been selected from a list of all facilities in the country for a survey. The sample represents the entire population, that is, all facilities in Tanzania. Most countries want to collect data and report information that represent facilities in the entire country as well as for within a country's regions of provinces.

In the case of the SPA, researchers also want to know about health facilities of different types (hospitals, health centres, dispensaries, and stand-alone clinics), as well as facilities run by different managing authorities (government, private, parastatal, and faith-based). We want the sample of hospitals surveyed to resemble the actual hospitals in the country, and we want the health centres sampled to resemble all health centres. However, there are many more dispensaries than hospitals in Tanzania. If we chose only a random sample of health facilities, we may only get a few hospitals, but we could get hundreds of dispensaries. Just a few hospitals in our sample would not be enough for any meaningful analysis.

For example, let's say that you have enough money to visit about 600 facilities for a survey that should be representative of all facility types (as in the Tanzania table to the right). In Tanzania, hospitals, health centres, dispensaries, and stand-alone clinics are not evenly spread out - there are many more dispensaries than hospitals.

A sampling statistician can determine how many facilities of each type should be surveyed in order to get reliable statistics for the specific indicators the country is interested in. In the case of Tanzania, the **blue column (1)** shows the actual number of facilities selected and interviewed in each type, ranging from 437 dispensaries and only 5 stand-alones. The sampling statistician assures us that these are enough facilities to get reliable results for each type of facility.

But now there is a new challenge. With this distribution of facilities by type, some types are overrepresented and some types are underrepresented. For example, the unweighted column tells us that 128 hospitals were surveyed, which equals 21% of all facilities in the sample (611). But in reality, hospitals only comprise 4% of all the health facilities in Tanzania. On the other hand, 437 dispensaries were surveyed, which equals 72% of the facilities in the sample. In actuality, more than 85% of health facilities in Tanzania are dispensaries. Would our survey show the true state of health facilities in Tanzania if we used this sample distribution?

In order to get statistics that are representative of the entire country, the distribution of the facilities in our sample needs to resemble the distribution of the facilities in the country. Hospitals, for example, should only contribute a very small amount to the total. Likewise, dispensaries should contribute more. The numbers of facilities of each type are weighted or adjusted so that each type's contribution to the total is proportionate to the actual distribution of health facilities in the country. The numbers in the **purple column (2)** represent the "weighted" numbers. The total sample size of 611 facilities has not changed, but the distribution of the facilities in the regions has been adjusted to represent their contribution to the total number of facilities in the country.

How do statisticians weight each category? They recalculate the categories to reflect the real distribution of facilities in the country. If you were to compare the **light red column (3)** to the actual facilities distribution in Tanzania, you would see that facilities of each type surveyed are contributing to the total sample with the same weight that they contribute to the total number of facilities in the country. The weighted number of facilities in the survey now accurately represents how many facilities are dispensaries - 86% of the facilities in Tanzania - and how few facilities are hospitals - only 4% of the facilities.

With sampling and weighting, it is possible to survey enough facilities to provide reliable statistics at both the national and zonal level, without distorting the overall distribution of facilities within the country. In general, only the weighted numbers are shown in each of the SPA tables, so don't be distressed if these numbers seem low - they may actually represent a larger number of facilities. The table will use parentheses and asterisks to warn you if there are too few unweighted cases in any category.

Note: Data from the actual, unweighted number of facilities are used for analysis. For example, even though the weighted number of hospitals is only 25, the data collected from all 128 hospitals is used for analysis. The only difference is that the results are weighted after analysis to represent info from hospitals in the proportion that they exist in the country.

Table 1.1 Distribution of facilities by type of facility, zone, and managing authority

Percent distribution of facilities (weighted) and number of facilities (weighted and unweighted), by type of facility, managing authority, and zone, Tanzania SPA 2006

| Background characteristics | Percent distribution of facilities (weighted) | Number of facilities | |
|----------------------------|---|----------------------|------------|
| | | Weighted | Unweighted |
| Type of facility | | | |
| Hospital | 4 | 25 | 128 |
| Health centre | 9 | 55 | 41 |
| Dispensary | 86 | 528 | 437 |
| Stand-alone | 1 | 3 | 5 |
| Managing authority | | | |
| Government | 65 | 399 | 415 |
| Private for-profit | 17 | 104 | 92 |
| Parastatal | 2 | 14 | 10 |
| Faith-based | 15 | 94 | 94 |
| Zone | | | |
| Northern | 18 | 110 | 103 |
| Central | 8 | 47 | 42 |
| Southern Highlands | 16 | 95 | 84 |
| Western | 13 | 82 | 71 |
| Lake | 15 | 89 | 83 |
| Southern | 10 | 61 | 58 |
| Eastern | 17 | 102 | 88 |
| Zanzibar | 4 | 25 | 82 |
| Total | 100 | 611 | 611 |